

Why do cells divide?

Modeling SA:V ratio

Cube	Initial Cbv	Final	SA:V ratio
Cube 1	1 cm. each side light rose	80% light rose edges remaining	6
Cube 2	2 cm. each side light rose	70% same	3
Cube 3	3 cm. each side light rose	10% same	2

Cube Side Length \rightarrow	1 cm	2 cm	3 cm
(L x W x h) Surface area \rightarrow	6 cm ²	24 cm ²	54 cm ²
Volume (L x W x H) \rightarrow	1 cm ³	8 cm ³	27 cm ³
SA:V ratio \rightarrow	6:1 = 6	24:8 = 3	54:27 = 2

12:4
3:1

As size increases, volume increases faster than the surface area. Big cell have a high demand & low supply. Demand increases as the cell grows.

A large SA:V ratio = high supply

Cells divide, to increase the SA:V ratio.

When a cell becomes too big, the demand is higher than the supply is, and therefore can't be provided what it needs. By dividing into two separate cells, the cell becomes 2 that have a high SA:V ratio. By having less volume to support, the cell is able to maintain what is needed + what is being provided. By becoming smaller, the cell is able to function + that is why cells divide.

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Why